

**CLAIMS**

1. A polypeptide having antimicrobial activity, comprising the amino acid sequence as set forth in SEQ ID NO:1, or a fragment thereof of at least 18 amino acids having antimicrobial activity:

5 G-X<sub>1</sub>-X<sub>2</sub>-X<sub>3</sub>-X<sub>4</sub>-X<sub>5</sub>-X<sub>6</sub>-X<sub>7</sub>-X<sub>8</sub>-X<sub>9</sub>-X<sub>10</sub>-X<sub>11</sub>-X<sub>12</sub>-X<sub>13</sub>-X<sub>14</sub>-X<sub>15</sub>-X<sub>16</sub>-Z;

wherein

X<sub>1</sub> = L, I, W or M;

X<sub>2</sub> = L, F, W or V;

X<sub>3</sub> = S, G, K, T, R, I, N, D or E;

10 X<sub>4</sub> = K, T, F, I, R, M, L or S;

X<sub>5</sub> = L or I;

X<sub>6</sub> = K, G, R, M or E;

X<sub>7</sub> = K, S, I, R, T or M;

X<sub>8</sub> = A, K, T, N, R or E;

15 X<sub>9</sub> = A, G, S, I, L, T, V, M or W;

X<sub>10</sub> = S, R, K or E;

X<sub>11</sub> = K, M, R, H, I, N or T;

X<sub>12</sub> = A, V, I, L, Y, F or T;

X<sub>13</sub> = L, A, G, C, F, V or W;

20 X<sub>14</sub> = K, Q, A, S, R or E;

X<sub>15</sub> = H, G, N, R, S, M, I, V or D;

X<sub>16</sub> = V, I, A or F;

Z = X<sub>17</sub> or X<sub>17</sub>-R-W-L; wherein X<sub>17</sub> = F, L, R, A, G, V, Y, C or P;

and wherein the amino acids making up the polypeptide are independently selected from D or  
25 L forms.

2. A polypeptide having antimicrobial activity, consisting of an amino acid sequence which consists of 18 amino acids and which is extended by the amino acid sequence R-W-L; wherein the amino acids making up the polypeptide are independently selected from D or L forms.

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3. The polypeptide of claim 1, which comprises the amino acids of anyone of SEQ ID NO:1 to SEQ ID NO:46.

4. The polypeptide of claim 1, which consists of the amino acids of anyone of SEQ ID NO:1 to  
35 SEQ ID NO:46.

5. A polynucleotide having a nucleotide sequence which encodes for the polypeptide defined

in any of claims 1-4.

- 5 6. A nucleic acid construct comprising the nucleotide sequence defined in claim 5 operably linked to one or more control sequences that direct the production of the polypeptide in a suitable host.
7. A recombinant expression vector comprising the nucleic acid construct defined in claim 6.
- 10 8. A recombinant host cell comprising the nucleic acid construct defined in claim 6.
9. A method for producing a polypeptide as defined in any of claims 1-4, the method comprising:
- 15 (a) cultivating a recombinant host cell as defined in claim 10 under conditions conducive for production of the polypeptide; and
- (b) recovering the polypeptide.
10. A composition comprising an antimicrobial polypeptide as defined in any of claims 1-4.
11. The composition of claim 10, which further comprises an additional biocidal agent.
- 20 12. A method for killing or inhibiting growth of microbial cells comprising contacting the microbial cells with an antimicrobial polypeptide as defined in any of claims 1-4.
13. A detergent composition comprising a surfactant and an antimicrobial polypeptide as
- 25 defined in any of claims 1-4.
14. An antimicrobial polypeptide as defined in any of claims 1-4 for use as a medicament.
15. An antimicrobial polypeptide as defined in any of claims 1-4 for use as an antimicrobial
- 30 veterinarian or human therapeutic or prophylactic agent.
16. Use of an antimicrobial polypeptide as defined in any of claims 1-4 for use in the preparation of a veterinarian or human therapeutic agent for the treatment of a microbial infection or for prophylactic use.
- 35 17. Use of an antimicrobial polypeptide as defined in any of claims 1-4 for killing or inhibiting growth of microbial cells.

18. A transgenic plant, plant part or plant cell, which has been transformed with a nucleotide sequence encoding a polypeptide having antimicrobial activity as defined in any of claims 1-4.

5 19. Use of at least one antimicrobial polypeptide as defined in any of claims 1-4 in animal feed.

20. Use of at least one antimicrobial polypeptide as defined in any of claims 1-4 in the preparation of a composition for use in animal feed.

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21. An animal feed additive comprising

(a) at least one antimicrobial polypeptide as defined in any of claims 1-4; and

(b) at least one fat soluble vitamin, and/or

(c) at least one water soluble vitamin, and/or

15 (d) at least one trace mineral, and/or

(e) at least one macro mineral.

22. The animal feed additive of claim 21, which further comprises phytase, xylanase, galactanase, and/or beta-glucanase.

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26. An animal feed composition having a crude protein content of 50 to 800 g/kg and comprising at least one antimicrobial polypeptide as defined in any of claims 1-4.